COLORADO RIVER RECOVERY PROGRAM Project No.: 139
FY-2004–2005 PROPOSED SCOPE OF WORK for:
Publication of Supplemental Update to Larval Sucker Guide

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Category:
Expected Funding Source:

_ Ongoing project
_ Ongoing-revised project
_ Requested new project
x Unsolicited proposal

x Annual funds
_ Capital funds
x Other (San Juan RIP co-sponsor)

I. Title of Proposal:

Publication of Supplemental Update to Larval and Early Juvenile Sucker Guide by Snyder and Muth, CDOW Technical Publication 38, 1990.

II. Relationship to RIPRAP:

General Recovery Program Support Action Plan item V.C–develop and enhance scientific techniques required to complete recovery actions.

III. Study Background/Rationale and Hypotheses:

Collections of the early life stages of fish are essential to research on and monitoring of razorback sucker (or other sucker) spawning sites and seasons, larval production, transport, distribution, nursery habitat, and survival, and other aspects of early life history. Such research cannot proceed effectively without accurate identification of at least razorback sucker or other target species among collected specimens. Morphological identification requires knowledge of the appearance of not only the target species but all similar species in the waters sampled and the diagnostic criteria for segregating them. For the early life stages of many species, including the

suckers and minnows of the Upper Colorado River Basin (UCRB), morphological criteria for identification change dramatically as the fish grow and develop, making diagnosis especially difficult and complicated. Descriptive information and diagnostic criteria must be well founded, sufficiently detailed, and documented in such a way that they are retrievable, usable, and verifiable by any interested researcher.

The (draft) final report for Recovery Project 112 constitutes, with minor modifications, a manuscript for publication of a supplemental update and expansion of the descriptions and keys in the Colorado Division of Wildlife (CDOW) guide to UCRB sucker larvae and early juveniles (Snyder and Muth 1990). The manuscript includes a listing of corrections and descriptive updates (character range extensions, replacement drawings), description of longnose sucker larvae and juveniles (only sucker not covered by the 1990 publication, an updated and expanded comparative summary, and an updated and expanded replacement for the printed keys–a computer-interactive key on CD and available over the internet.

Although unpublished copies of the final report and key for Recovery Project 112, when used with existing copies of the 1990 guide, will facilitate more certain identification of razorback sucker and other larval and early juvenile suckers collected in the UCRB, formal publication will provide for much broader recognition, distribution, and use of the descriptive information and computer-interactive key. In addition to the UCRB, the proposed publication will be useful wherever the covered species may occur in Colorado, the Southwest, and North America. Still other biologists will find it valuable as a model and proof of concept for the application of computer-interactive keys to identification of closely related or very similar fish larvae.

This proposed scope of work provides for formal publication of the manuscript. Publication could proceed, at similar cost, as either a supplemental update to the 1990 guide with a limited reprint of that guide or an integrated portion of a new edition of the guide. The former option would necessitate manual update of the user's copy of the 1990 guide by the user and use of both it and the supplement with the interactive key. The latter option, which is proposed herein, would be a nicer product and much more convenient and desirable for the user (updates, the revised comparative summary, the introduction and instructions for the computer-interactive key, and the new species account for longnose sucker would be cleanly integrated with the old guide and the former 60-page printed key deleted). The supplemental update could be published without a reprint of the 1990 guide, but that publication's original print run of 1,200 copies has been exhausted (out-of-print) since the mid-1990's. Accordingly, that less costly option was dismissed.

IV. Study Goals, Objectives, End Product:

The goal is to make more readily available the updated and new descriptive information and new taxonomic tool constituting the final report for Recovery Project 112 to facilitate easier and more accurate identification larval and early juvenile suckers collected in the UCRB or wherever the covered species might occur. Also to promote use of the computer-interactive key as a model and proof-of-concept for preparation of other keys to early life stages of fish.

The objective is to accomplish these goals and complete Part 1 of a Comprehensive Guide to the Larvae and Early Juveniles of Cypriniform Fishes in Western Colorado and the UCRB by formal publication of a new edition of the1990 guide integrating the new and updated information.

CDOW will serve as the publication outlet, the end product will be publication of 1,500 copies of a new edition of the guide as a CDOW Technical Publication.

V. Study area: UCRB

VI. Study Methods/Approach:

I will specify any necessary additional changes to the original guide and work with the CDOW editor to integrate the content of the supplemental update in the guide. The printing contractor will work with the editor (and me if necessary) on integrating replacement and new sections with any existing negatives for unchanged (except for page numbers) or easily modified (e.g., range extension in a species account table, reversal of illustrations) sections. Most distribution and requests for copies would be handled by CDOW with a supply of copies provided to both the Recovery Program and Larval Fish Laboratory for internal and additional distribution.

VII. Task Description and Schedule:

Publication–as soon as possible.

VIII. FY-2004 Work

– Deliverables/Due Dates:

Deliverables will be publication of "Catostomid Fish Larvae and Early Juveniles of the Upper Colorado River Basin–Morphological Description, Comparison, and Computer-Interactive Key (Updated and Expanded Edition of Colorado Division of Wildlife Technical Publication 38 and Part I of a Comprehensive Guide to the Cypriniform Fish Larvae and Early Juveniles of Western Colorado and the Upper Colorado River Basin)" by Darrel E. Snyder and Robert T. Muth as a CDOW Technical Publication.

CDOW would handle subsequent distribution and requests, as well as provide an as sufficient number of copies (e.g, 100) to the Recovery Program and LFL for internal and other distribution. Publication would be scheduled for winter or spring 2004.

– Budget:

1,500-copy publication of updated edition (~124 pp) of 1990 guide, CDOW Tech. Publ. 38.[a]

		Total
-	Labor: PI ($5341/mo; 3 wks) [b]	$3,700
-	Other: Printer–printing & assembly [c]	7,195
	Printer–stripping charges	300
	Optional color covers	500

	CDs (1.40 each)	2,100
-	Total Direct Costs:	13,795
-	Indirect Costs (15% TDC) [d]	2,069
-	Total Direct & Indirect Costs	15,864

[a] Publication will be through CDOW and CDOW will cover at least internal costs for such publication, including that of its publication specialist or editor. Printer cost data were provided through CDOW publication specialist Nancy Wild. Cost data for CD duplication with labels and sleeves were provided by Kinko's of Fort Collins. Any printing costs beyond those budgeted will be accommodated by reduction in the number of printed copies.

[b] Includes fringe benefits.

[c] Includes spiral binding, b&w covers, CD pocket on inside back cover.

[d] Assumes MOU in which the University covers remainder of standard 45% indirect costs rate.

IX. Budget Summary

FY-2004: $15,864 ($6,000 will be provided from the San Juan River Basin Recovery Implementation Program and $9,900 will be provided by the Upper Colorado River Endangered Fish Recovery Program)

X. Reviewers:

Tom Czapla via coordinator's review of draft final report for Recovery Project 112. Copy was also forwarded to Tom Nesler for CDOW consideration. No comments or suggestions had been received from either party prior to submission of this proposal to the Recovery Program.

XI. References:

Snyder, D. E. 2003. Computer-interactive key to sucker larvae and early juveniles of the Upper Colorado River Basin with description of longnose sucker. (Draft) Final report of Colorado State University Larval Fish Laboratory to Upper Colorado River Endangered Fish Recovery Program, U.S. Department of the Interior Fish and Wildlife Service, Lakewood, Colorado.

Snyder, D. E., and R. T. Muth. 1990. Description and identification of razorback, flannelmouth, white, Utah, bluehead, and mountain sucker larvae and early juveniles. Colorado Division of Wildlife Technical Publication 38.